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| - | * Materials: My partner and i used very little material, because this was a survey. We wrote down our counts on paper. Binoculars may be usefull in further experiments, but did not seem to help in counting the geese in ours. The park servce used pvc poles to hold the plastic flags, and the ReJeX-iT chemical to spray the turf grass. They also used a commercially available pump sprayer. * Procedure To harass the geese, the park rangers used a number of various methods. The rangers deployed visible deterrents in the way of plastic flags, in and around the geese habitat. This was to audibly and visibly deter or intimidate the geese. They also worked round the clock shifts to physically chase the birds away. This was done by yelling at them and running to them to scare them away. To further deter the geese from settling in the park, ReJeX-iT, a commercially available taste repellant, was applied to the turf grass by spraying. This was done frequently, after watering or mowing to keep the chemical on the grass at all times. To prevent further generations from hatching, the eggs were to be addled. First the nests had to be located. Most of the nests were found in the back lakes and one main island. "Nests are commonly found in thick brush that is adjacent to water and are attended by the female goose who leaves the nest only to feed for brief periods. While the nest is being attended, the gander, or male goose, is usually in the water within 50 feet of the nest, patrolling for signs of danger. When searching for nests, the ganders are used as a beacon to locate nests. Once the nest is found, the goose can be forced to leave the nest and the egg removed. Once the egg is lifted from the nest, shake it vigorously for two minutes. The egg is then marked and returned to the nest. Shaking must break the yolk, thus preventing eggs from hatching."(egg). All this being done, the raw data still need to be collected. To get an accurate count of the population, the surveys of the geese should be done consistently, the same time, daily. To compare data, a survey must be taken before, during, and after the treatment. In our experiment, we divided the park into territorial sections of grass, beach, and water, just to provide the park with data on geese movement. This however should not affect the total geese population count. To keep the results as accurate as possible, counts should be omitted on rainy or stormy days. Geese tend to be dormant during this weather and are not available to be counted. Counting geese on days in which the weather may affect their numbers would throw off your data. Attached are spreadsheets of data on the population of Canadian Geese at Shadow Cliffs Regional Park before and during the treatment.     + Data  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | * + SHADOWCLIFFS GEESE COUNT BEFORE TREATMENT |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | | * + Count | * + #On Grass | * + #On Beach | * + #In Water | * + Total # | * + %On Grass | * + %On Beach | * + %In Water | | * + 1 | * + 87 | * + 3 | * + 23 | * + 113 | * + 76.9911504424779 | * + 2.65486725663717 | * + 20.353982300885 | | * + 2 | * + 102 | * + 4 | * + 20 | * + 126 | * + 80.9523809523809 | * + 3.17460317460317 | * + 15.8730158730159 | | * + 3 | * + 91 | * + 12 | * + 34 | * + 137 | * + 66.4233576642336 | * + 8.75912408759124 | * + 24.8175182481752 | | * + 4 | * + 68 | * + 0 | * + 0 | * + 68 | * + 100 | * + 0 | * + 0 | | * + 5 | * + 99 | * + 0 | * + 6 | * + 105 | * + 94.2857142857143 | * + 0 | * + 5.71428571428571 | | * + 6 | * + 81 | * + 3 | * + 13 | * + 97 | * + 83.5051546391753 | * + 3.09278350515464 | * + 13.4020618556701 | | * + 7 | * + 89 | * + 0 | * + 0 | * + 89 | * + 100 | * + 0 | * + 0 | | * + 8 | * + 86 | * + 6 | * + 12 | * + 104 | * + 82.6923076923077 | * + 5.76923076923077 | * + 11.5384615384615 | | * + 9 | * + 112 | * + 4 | * + 9 | * + 125 | * + 89.6 | * + 3.2 | * + 7.2 | | * + 10 | * + 79 | * + 29 | * + 34 | * + 142 | * + 55.6338028169014 | * + 20.4225352112676 | * + 23.943661971831 | | * + 11 | * + 109 | * + 1 | * + 3 | * + 113 | * + 96.4601769911504 | * + 0.884955752212389 | * + 2.65486725663717 | | * + 12 | * + 97 | * + 0 | * + 0 | * + 97 | * + 100 | * + 0 | * + 0 | | * + 13 | * + 93 | * + 9 | * + 21 | * + 123 | * + 75.609756097561 | * + 7.31707317073171 | * + 17.0731707317073 | | * + 14 | * + 69 | * + 0 | * + 0 | * + 69 | * + 100 | * + 0 | * + 0 | | * + 15 | * + 62 | * + 24 | * + 35 | * + 121 | * + 51.2396694214876 | * + 19.8347107438017 | * + 28.9256198347107 | | * + 16 | * + 78 | * + 0 | * + 5 | * + 83 | * + 93.9759036144578 | * + 0 | * + 6.02409638554217 | | * + 17 | * + 107 | * + 0 | * + 0 | * + 107 | * + 100 | * + 0 | * + 0 | | * + 18 | * + 91 | * + 0 | * + 42 | * + 133 | * + 68.4210526315789 | * + 0 | * + 31.5789473684211 | | * + 19 | * + 89 | * + 0 | * + 5 | * + 94 | * + 94.6808510638298 | * + 0 | * + 5.31914893617021 | | * + 20 | * + 112 | * + 3 | * + 11 | * + 126 | * + 88.8888888888889 | * + 2.38095238095238 | * + 8.73015873015873 | | * + 21 | * + 84 | * + 9 | * + 12 | * + 105 | * + 80 | * + 8.57142857142857 | * + 11.4285714285714 | | * + Average | * + 89.7619047619048 | * + 5.09523809523809 | * + 13.5714285714286 | * + 108.428571428571 | * + 84.7314365334355 | * + 4.09820307731482 | * + 11.1703603892497 |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | SHADOWCLIFFS GEESE COUNT DURING TREATMENT |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | | Count | #On Grass | #On Beach | #In Water | Total# | %On Grass | %On Beach | %In Water | | 1 | 18 | 0 | 3 | 21 | 85.7142857142857 | 0 | 14.2857142857143 | | 2 | 36 | 6 | 11 | 53 | 67.9245283018868 | 11.3207547169811 | 20.7547169811321 | | 3 | 22 | 2 | 3 | 27 | 81.4814814814815 | 7.40740740740741 | 11.1111111111111 | | 4 | 35 | 2 | 4 | 41 | 85.3658536585366 | 4.8780487804878 | 9.75609756097561 | | 5 | 22 | 15 | 4 | 41 | 53.6585365853659 | 36.5853658536585 | 9.75609756097561 | | 6 | 35 | 8 | 4 | 47 | 74.468085106383 | 17.0212765957447 | 8.51063829787234 | | 7 | 35 | 0 | 14 | 49 | 71.4285714285714 | 0 | 28.5714285714286 | | 8 | 27 | 4 | 13 | 44 | 61.3636363636364 | 9.09090909090909 | 29.5454545454545 | | 9 | 29 | 3 | 13 | 45 | 64.4444444444444 | 6.66666666666667 | 28.8888888888889 | | 10 | 26 | 0 | 10 | 36 | 72.2222222222222 | 0 | 27.7777777777778 | | 11 | 34 | 2 | 7 | 43 | 79.0697674418605 | 4.65116279069767 | 16.2790697674419 | | 12 | 26 | 0 | 5 | 31 | 83.8709677419355 | 0 | 16.1290322580645 | | 13 | 28 | 0 | 3 | 31 | 90.3225806451613 | 0 | 9.67741935483871 | | 14 | 52 | 4 | 21 | 77 | 67.5324675324675 | 5.19480519480519 | 27.2727272727273 | | 15 | 49 | 2 | 7 | 58 | 84.4827586206897 | 3.44827586206897 | 12.0689655172414 | | 16 | 43 | 5 | 9 | 57 | 75.4385964912281 | 8.7719298245614 | 15.7894736842105 | | Average | 32.3125 | 3.3125 | 8.1875 | 43.8125 | 74.9242989862598 | 7.18978767399928 | 17.8859133397409 | | |
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